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ABSTRACT

Higher education institutions and systems must change to respond to the demands of a more complex era. Increased demand for education, continuing decreases in available funds to support institutions, rising costs, and questions about the quality of higher education suggest that the current system is inadequate. Much of the shape of higher education evolved in response to past needs of the nation's higher education sector. The current era places more complex demands on higher education and yet resources remained fixed or are decreasing. These changes define a new environment that requires resource reallocation. Yet the governance system appears incapable of reallocating funds due to the complexity of the sector, inadequate information, unclear priorities, and dispersed power. A new system must be a more participatory process and must be iterative: central administrators must reallocate resources, but departments must be centrally involved. Matching resources to goals requires criteria such as: quality, centrality, demand and workload, cost effectiveness, comparative advantage. The process of making allocation decisions is central and should not involve closed groups of administrators or faculty task forces which set priorities, should require public preliminary recommendations, and academic units should put forward ambitious plans while identifying their low priorities. (JB)

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RAND Issue Paper

Exploring Topics of Interest to the Policy Community

APRIL 1993 INSTITUTE ON EDUCATION AND TRAINING ISSUE 2

Restructuring Higher Education—By Design

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Restructuring Higher Education—By Design

Roger Benjamin and Stephen Carroll

Higher education is clearly one of America's greatest strengths. But the entire sector faces serious problems, including widespread retrenchments, dramatically rising tuition, and growing concerns about quality. Our preliminary research suggests that these problems, though important in their own right, are symptoms of a more fundamental malady: the systems used to allocate resources within and among higher education institutions cannot cope with a rapidly changing environment. That environment—shaped by new and changing demands, limited or declining resources, and escalating costs—clearly calls for reallocating resources among functions. The current system is inherently unable to do that.

Elsewhere, we present this argument in depth and propose a research program to test the hypothesis, map and assess resource allocations, and suggest possible improvements.[1] But many higher-education leaders must act now, before more research can be completed. For them, this paper outlines our basic hypothesis and presents preliminary recommendations. Those recommendations include both a list of elements that a restructured resource allocation system should have and a strategy for effecting change in this complex and decentralized decisionmaking environment.

[1]Readers should see Roger Benjamin et al., *The Redesign of Governance in Higher Education*, RAND, MR-222-IET, forthcoming.

A Crumbling Foundation?

Higher education, from community colleges to multiple-mission universities, is critical to the nation's social and economic well-being. It is a linchpin for economic growth and international competitiveness. It remains the principal mechanism for social mobility. And, through its preparation of future K–12 teachers, it is an indispensable element of the quality of elementary and secondary education.

This critical sector faces serious problems.[2] Over the past two years, 36 states have cut their budgets for higher education, accelerating the impact of long-term trends. The result? Students have been turned away, courses canceled, facilities neglected. Class sizes are rising, libraries and equipment are growing outdated, and faculty face salary freezes or layoffs. Tuition and fees are rising even faster than health-care costs, threatening low- and middle-income students' access to college. The sector's problems are not just financial; undergraduate retention and graduation rates are often less than 50 percent. In particular, African-American and Hispanic students—too many of whom cannot enter college in the first place—continue to drop out too often. And some critics contend that many new B.A.s have

[2]See Benjamin et al., op. cit., for a detailed discussion of higher education's problems and for references to the relevant literature.

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failed to master writing, quantitative analysis, and critical thinking. At the graduate level, debate continues about the fit between national need and the production of Ph.D.s in mathematics, engineering, and the sciences. At the same time, the proportion of scientific citations and patents produced by faculty at American colleges, universities, and research institutions is declining compared to our key competitors.

One response is to call for leadership. After all, it is individual boards of trustees, presidents, provosts, and deans who act. But evidence suggests that most institutions and systems are governed by structures that preclude reform by individual leaders. For that matter, few leaders of institutions remain at their posts long enough to accomplish meaningful reform. Since 1985, for example, the Big Ten universities have changed presidents every 2.5 years, on average. Such dramatic instability both contributes to the problem and reflects the frustration of leaders trying to make progress within the current system.

These problems may well have discrete causes; each certainly merits attention in and of itself. But evidence suggests that despite all the leadership, money, and attention we can muster, these problems cannot be resolved within the current system. True solutions will require reallocating significant resources. Yet at every level of the sector, the mechanism by which resources are allocated—the *governance system*[3]—cannot reallocate. It can distribute resources along traditional lines, with marginal increases or, perhaps, marginal decreases. But it does not provide a basis for changing priorities. Such a system cannot cope with rapid change. Because rapid change now seems permanent, the governance system must be restructured. That change, alone, may not be sufficient to solve many of the vexing issues facing higher education. But it is necessary. Without it, no solution can work.

Simpler Times

The present governance system is not the product of deliberate design. Rather, it evolved in response to the needs of America's higher education sector. For more than a century, from the Civil War through the Vietnam War, demands on higher education—and the resources available to meet those demands—grew rapidly in a single dimension: volume. The number of students increased, but their composition hardly varied; most were 18 to 22, white, and middle or upper class. This changed, of course, but very gradually. Thus, the demands that students placed on the system remained largely the same in character.

Other demands also evolved quite slowly. The nation looked to higher education for basic research and for service to various communities, but it did not expect the sector to take an active role in solving major social problems. Finances, too, were essentially stable. For public institutions, state legislatures matched increasing enrollments with growing budgets. For private schools, growth in personal incomes supported increasing enrollments and tuition. The costs of research and instructional equipment, library acquisitions, faculty, and other inputs grew slowly. Thus, the real resources available to postsecondary education grew at least as fast as demands did. Throughout this era, the sector's primary concern was managing growth.

In response to this long-term environment of steadily growing resources, the higher education sector evolved a governance structure that is at once hierarchical and decentralized. Governance is *hierarchical* in that department chairs report to deans, who report to vice presidents, who report to a president. In most state systems, presidents report to central administrators. At virtually every level, units report up or down the chain but tend not to be connected to parallel units. Governance is *decentralized* in that academic departments have a great deal of autonomy over how they allocate their resources. Thus, the various colleges and administrative units typically act in isolation. The Dean of the College of Arts and Sciences, for example, may allocate resources among the several dozen social science, humanities, life science, and physical science departments; the Dean of Engineering may do the same for a variety of engineering programs; and the Vice President for Operations may do the same for departments such as facilities maintenance, parking, and campus security. These processes are neither coordinated with parallel units nor controlled by higher-level administrators.

This system evolved to serve one purpose: managing incremental growth. In an environment of steadily increasing budgets, that orientation was appropriate. With widely dispersed power, it was probably inevitable; for the decisionmaker at any level, making comparative judgments among the units below—perhaps alienating powerful groups by failing to provide an equitable increase—would be difficult and painful. How much easier to simply supply every unit with a larger budget every year along with independence in using it. After decades of such decisions, the entire system is superbly equipped to distribute a 5 percent budget increase or add new functions. This system can also be used to distribute across-the-board cuts. But what happens when such

[3] The functions and boundaries of higher education's governance systems extend beyond resource allocation to include the aggregation and articulation of interests. For our purposes, we initially focus on the resource-allocation function.

cuts are no longer enough? Cutting budgets on any basis other than across the board is virtually impossible for the current governance system to formulate or carry out.

A More Complex Era

Over the past two decades, higher education's environment has changed dramatically and continually. The system now faces an increasingly diverse student population. This diversity, while greatly enriching the sector, also changes the demands for curricula and programs, and these demands add to, not replace, the ones for which the system originally evolved. Society, too, constantly adds to the agenda. The university is expected not only to support basic research, but to play a central role in solving national problems: support American high-tech, find a cure for AIDS, develop a new generation of K–12 teachers, and so on.

Yet as these demands grow, resources remain fixed or even shrink. Many states seem to have reached real fiscal limits. Federal support, already declining in real terms, is constrained by the deficit. And with the end of the Cold War, government-sponsored university research has come into question. At the same time, the costs of inputs—faculty, facilities, and advanced equipment—are escalating rapidly.

Taken together, these changes define an entirely new environment—one that literally requires resource reallocation. If demands change dramatically and resources fail to grow, then spending on some existing programs must decrease; otherwise, new demands cannot be met.

A System Inadequate to the Task

Unfortunately, the system that controls resource allocation, the governance system, is almost incapable of reallocating funds. To understand why, consider four basic facts about higher education.

Complexity

The sector is large and complex. One major research university, for example, includes 13 schools and colleges and at least 72 support organizations. And just one of those colleges, by itself, contains 89 departments, 28 interdisciplinary programs, 37 special study units, and 28 organized research units. The university's other component organizations are more or less equally complex.

The sector also lacks the ability to systematically recognize the tradeoffs among competing goals implicit in resource-allocation decisions. In principle, colleges and universities must continually address questions like this: "Would the addition of a classics professor add more to our ability to fulfill our education mission than the acquisition of instructional equipment for Geophysics or an expansion of our student counseling program?" In practice, however, the governance structure prevents most institutions and systems from even asking, much less answering, such questions.

Further, the sector lacks a single guiding measure of success. Even if questions like the above are asked, higher education has no means for coherently answering them. Faced with similar tradeoffs, even the largest and most complex private corporation can always turn to the bottom line, choosing the option that will maximize profits. Higher education has no equivalent. For that matter, higher education even lacks an appropriate vocabulary for comparing such diverse activities.

Inadequate Information

Because no decisionmaker needed to choose among competing functions, no information systems evolved to support such decisions. Higher education officials at all levels simply don't have the comparative information they need to understand the tradeoffs among missions and organizations. For example, we combined data from a number of different sources to calculate what one state's flagship university spent per pupil in its college of liberal arts. The answer, in 1990–91, was $4,300. Through a similar exercise, we were able to calculate that in the same year, one of the state's public two-year colleges spent about $25,000 per pupil in its program of mobile home repair. Higher education leaders in that state were dismayed when they saw the results of these analyses. None of them had consciously decided that these allocations would serve the state's purposes or, for that matter, even considered their relative merits. Until our research project brought together data from several different sources, no one had ever seen this comparison. The state's legislators and its higher education coordinating commission had no way of comparing the costs and benefits of the two programs.

Unclear Priorities

As we have seen, allocating resources among many equally important goals presents difficult tradeoffs. Choosing between academic uses and physical plant, for example, becomes a matter of judgment. The current system lacks the ability to make such judgments coherently, partly because clear priorities are seldom established and transmitted. For example, when the California State University faced significant fiscal cuts in 1992, three campuses, each with the same core mission

(teaching undergraduates), proposed radically different responses. One proposed the elimination of nine departments without which the college could not meet its core mission. A second proposed to cut the *entire* library acquisition budget, though some level of acquisitions would seem literally indispensable. The third proposed to eliminate all part-time faculty—its busiest and most cost-effective teachers. Any one of these decisions might be defended. The combination, however, strongly suggests that each college had either a very different sense of the mission it was supposed to serve or a very different set of internal priorities within that mission.

Dispersed Power

Power to make resource allocations is divided and constrained. Funding comes from many sources and through many subcomponents. Many funding mechanisms impose constraints on the uses to which the resources they provide can be put. Management options are also limited by a long list of constraints, ranging from OSHA requirements to the tenure system. Accrediting agencies determine how many books law libraries must purchase. Engineering associations decide what goes into the curriculum and what instructional equipment must be provided. State legislatures and other groups have a fundamental impact on which academic programs are created or maintained.

Even with good information and clear priorities, the sector's numerous constraints and powerful interest groups make it difficult to implement decisions. Consider, for example, one research university's experience: in the mid-1960s, the Vietnam conflict inspired great national interest in a number of Third World areas, including South Asia. The federal government and a major foundation offered the university support to found a South Asian Studies Department. The university did so. Over time, under normal department-based decisionmaking processes, eight faculty were hired and eventually tenured. But in the mid-1970s, when interest in South Asia waned, the external funders turned their attention (and support) to more current issues, and the support ended. Although disbanding the South Asian Studies Department by declaring financial exigency or merging it with another unit was theoretically possible, in practice it was politically impossible to carry out. So the university now supports eight faculty members who teach, on average, less than three students apiece. In comparison, faculty members in similar departments teach, on average, more than 30 students.

A Window of Opportunity

Given the changed environment, a redesign of higher education's governance structures is clearly necessary. But the only groups that can or should accomplish it are the existing constituencies—who have strong incentives to compromise with one another, diffusing conflict by making tradeoffs that lead inevitably toward small, across-the-board cuts. Although a process like this cannot help the sector adapt to its new environment, these groups are understandably reluctant to accept a new one.

Yet we believe change is possible. Financial pressures have created an opportunity to forge agreement on new assumptions, structures, and procedures by which resources can be allocated. If retrenchment and reallocation are inevitable, all participants have strong incentives to search for a better way, despite the potential danger. Further, the evolution of new management paradigms in the private sector suggests the directions for change: a less hierarchical, more participatory process, with evaluation criteria shared among all participants.

Even so, the process is delicate. The current system grew up over many decades. Without clear evidence to the contrary, a member of the sociology department is unlikely to view the physical plant administrator's fiscal problems as directly linked to her department's future. And under financial stress, all participants may question even the most basic and apparently neutral information and analyses. So the process of reform, and the distribution of power under the reformed system, are at least as important as the new system's goals, information, and result. A governance system perceived as unfair, or as created by an unfair process, may produce brilliant decisions on how resources should be spent—but those decisions are unlikely to be accepted.

Creating a More Participatory Process

Thus, the new system can be neither bottom-up nor top-down; it must be both.[4] The former has left higher education unable to set priorities, focus missions, and implement choices. The latter, used only when fiscal crisis forces decisionmakers to go beyond small across-the-board cuts, almost always fails: Administrators propose sweeping cuts. The targeted units argue that their program cannot be judged by those outside the field; that they had no opportunity to present their own data and criteria (often true, since central administrators seldom have access to appropriate statistics on cost, faculty/student ratios, and output measures); that

[4] It is here that the governance functions of aggregation and articulation of interests become salient.

alternative cuts have not been adequately explored. The faculty contend that the top-down strategy violates the collegial nature of the institution. Thus, the central administration's suggested cuts are usually rejected by the faculty senate and, in response to the faculty's action, by the president and/or board of trustees. The aborted effort weakens departments by negative publicity, destroys the collegiality between departments and administrators, and publicly scars the institution, leaving it with even larger problems than the fiscal crisis that began the process.

To avoid these extremes, the new governance system must be *iterative*—central administrators must reallocate resources, but departments must be centrally involved. The latter need guarantees and incentives, not just threats to encourage their participation. Thus, the process must be *university-wide,* with all academic and nonacademic units subjected to the same scrutiny. The effort should not begin with targets in mind. Rather, central administrators and governing boards must articulate a clear set of goals, e.g., percentage cuts to be achieved, missions to be clarified. They must also agree to accept the recommendations produced by the process and not to allow exceptions. All participants must agree as well to clear timetables. Academic units should be asked to help set the guidelines for the planning and priority-setting documents that each will submit, and to define the statistical information used. Several *review mechanisms* are needed. Administrators must have final authority, but should appoint blue-ribbon committees from faculty assemblies to review and evaluate the planning documents. When decisions deviate from department recommendations, these committees provide a check. And final decisions that follow the recommendations of such committees will be much more likely for the faculty to accept.

Developing Shared Criteria

Matching resources to goals requires criteria that can weigh academic programs against one another and against nonacademic units. Although developing such criteria may seem impossible, one of the authors has participated in three successful attempts to do so, all producing similar criteria:

- *Quality.* This criterion, inevitably subjective, applies to all the institution's components: faculty, students, libraries, etc. Indicators of quality might include faculty publications, patents, and citations; national ratings and rankings; attrition or graduation rates; and results of standardized assessments. Quality assessments should be sensitive to changing allocation patterns; reducing department budgets in a state university, for example, might have little effect on SAT scores of entering students but a substantial effect on learning. Some quality measures can and should be developed by the components under study (e.g., results of academic program reviews).
- *Centrality.* This criterion measures a program's contribution to the institution's or system's mission—e.g., is the program essential to a challenging liberal arts education? The typical mission statement is too broad; strategic plans, accreditation self-studies, and interviews with policymakers may be more useful.
- *Demand and Workload.* Programs should be evaluated on their level of utilization, from both a short-term and a long-term view. Indicators here might include applicant flow, quality of acceptances, support to other programs, instruction of students, or research on pressing societal problems. Programs should be compared across institutions and states using a stable formula.
- *Cost Effectiveness.* Because aspirations are always limited by the resources available, programs must be continually examined to see if there are more efficient ways to accomplish the same ends. Yet cost alone must not govern the decision; a program's effectiveness in using the resources provided to it must also be weighed. When taken together, cost and effectiveness provide one important measure of whether funds are being put to the best use.
- *Comparative Advantage.* This criterion should get at the rationale for a program's place in the institution or system—what unique characteristics make it essential to the community, region, nation, or institution itself?

Each group developing and applying such criteria will bring its own experiences and judgments to the task. The development and measurement of criteria such as these will be a challenge. But only with these sorts of guideposts, and with the process we have described, can priorities indeed be agreed upon.

Reaching Useful Consensus

Just as process was critical in establishing a new governance system, the process of making allocation decisions within that system is absolutely central. Key elements:

- *There should be no closed "star chambers" of administrators or faculty task forces to set priorities.* Openness does bring controversy and negative

publicity. But if faculty, departments, or colleges are not given due process, they may seek legal and political redress. Indeed, unless the process is visibly open and fair, the decisions it generates are unlikely to be accepted.

- *Initial recommendations should be public and preliminary, allowing those affected to reply.* Appeal mechanisms must be provided. No small group of decisionmakers can alone set priorities for such a large and complex organization. Only an open process, consciously including appeal and disagreement, can produce consensus. Though the results will not be without pain, they will be positive.
- *Academic units should put forward ambitious plans that would require larger budgets, and they should list their low priorities.* Institutions can grow even as they cut back. If, for example, missions become more sharply focused, raising outside funds may be easier.

The basic need—achieving consensus on sharp, unevenly distributed cuts—may sound impossible. But if the process is well designed, and if participants help design it and participate under rules developed through wide consultation among all levels of decisionmaking, the institution may well accept the results. The academic programs most negatively affected may not agree, but administrators and faculty leaders can point to the fairness of the process itself. Only this can create support for the kind of painful but healthy change the nation requires.

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